Clinician counseling to promote physical activity
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Authors' objectives
To determine whether counselling adults in primary care settings improves and maintains activity levels.

Searching
Searches were conducted in the Cochrane Database of Systematic Reviews and the Cochrane Controlled Trials Register (April 2000 and February 2001), and in MEDLINE and HealthSTAR from 1994 to June 2001; the Best Evidence database was also searched. The search terms were stated. Trials published before 1994 were identified from the last USPSTF review (see Other Publications of Related Interest no.2). Experts were contacted for additional references and the reference lists of pertinent articles were reviewed.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), controlled clinical trials, case-control studies, observational studies and systematic reviews were eligible for inclusion if they were assessed as being of 'good' or 'fair' quality on the U.S. Preventive Services Task Force (USPSTF) scale (see Other Publications of Related Interest no.1). RCTs and non-randomised controlled trials were included. Only studies published since 1994 were included.

Specific interventions included in the review
Studies of counselling interventions were eligible for inclusion if they aimed to increase physical activity and the patient's primary care clinician (nurse practitioner, physician or physician assistant) performed some components of the intervention (e.g. assessment, counselling or referral). The majority of the included studies were of brief (3 to 5 minutes) counselling interventions conducted in typical primary care practices. In most studies the clinician advised regular, moderate-intensity physical activity; in some trials clinicians advised vigorous activity as an option. The included studies compared counselling interventions with other interventions or with usual care. The studies were of interventions with combinations of the following elements: interventions delivered by trained nurses or physicians; written prescription; behaviour counselling; extended phone call support; follow-up discussion; goal setting; preventative clinical screening; mailed booklet; educational material; interactive assistance group; and group counselling. The studies targeted physical activity, either alone or in combination with other behavioural targets (diet change or smoking cessation).

Participants included in the review
Studies of general primary care patients were eligible for inclusion. The included studies were of sedentary or minimally active adult or senior men and women. In the individual studies, clinicians excluded patients with contraindications to physical activity.

Outcomes assessed in the review
Studies that reported behavioural outcomes (physical activity) were eligible for inclusion. The included studies assessed physical activity using a brief self-report completed by the patient or using a clinical or researcher interview. The self-report measures used in the individual studies were: Physical Activity for the Elderly; Physical-based Assessment and Counseling on Exercise; Patient-centered Assessment and Counseling on Exercise plus Nutrition; College Alumni Questionnaire; 7-day Physical Activity Recall; Current Physical Activity; Risk Factor Prevalence Survey No. 3 (Australian Heart Foundation); and the Allied Dunbar National Fit Survey.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Validity was assessed using criteria developed by the current USPSTF (see Other Publications of Related Interest no.1). The studies were rated as ‘good’ (met all criteria and likely to be valid), ‘fair’ (possibly or probably valid) or ‘poor’ (fatal flaws rendering the results invalid). At least two reviewers assessed study validity.

Data extraction
A single reviewer abstracted the data using a special data extraction tool designed by the Behavioral Counseling Working Group of the USPSTF. The specific elements extracted were the study design, setting, patient participants, providers, intervention details and outcomes.

Methods of synthesis
How were the studies combined?
The studies were summarised with respect to study characteristics and quality, then grouped according to the comparator intervention (usual care versus other active intervention). A narrative synthesis was then undertaken.

How were differences between studies investigated?
Differences between the studies were discussed in the text of the review with respect to study characteristics such as quality.

Results of the review
Ten trials (9,320 adults) were included: 9 RCTs and 1 non-randomised controlled trial.

Two trials were rated as ‘good’ quality and the other 7 trials were rated as ‘fair’ quality. The methodological problems included: inadequate description of the counselling intervention; the lack of generalisability due to the use of highly motivated providers; baseline differences in physical activity; uncertain or low provider adherence; inadequate power to detect differences due to the high level of baseline activity; small numbers of participants (providers and patients); and the inclusion of advice in usual care groups.

Interventions compared with a usual care control (5 RCTs and 1 non-randomised controlled trial).

The results were mixed. Only one of the 3 trials reporting short-term (less than 6 months) outcomes found that the intervention significantly increased activity in comparison with usual care. Neither of the studies reported a significant interaction. Two of the 6 trials reporting long-term (greater than 6 months) outcomes found that the intervention significantly increased activity in comparison with usual care. None of the other 4 studies found any association.

Interventions compared with each other (3 RCTs).

One RCT found that advice plus agreeing a goal plus written prescription significantly increased activity at 6 weeks, compared with advice alone. One RCT found that specific goal setting significantly increased activity at 6 weeks in comparison with no specifically set goals. One RCT that compared advice, advice plus educational materials and both combined plus counselling found no significant difference in energy expenditure or fitness for men, but found that the combined intervention significantly increased self-reported physical activity in women at 6 months compared with advice plus educational materials. One study (148 healthy adolescents, 74% met recommendations for vigorous exercise at baseline) found that behaviour-change counselling for diet and exercise, which incorporated goal setting, increased the number of days on which moderate exercise was performed from 3.09 days per week at baseline to 4.52 days per week at 4 months' follow-up.

Adverse effects.

The only trial that reported adverse effects found musculoskeletal injuries in 30% of the patients annually. There was no usual care control group for comparison.

Authors' conclusions
The evidence of whether counselling adults in primary care settings is effective in increasing physical activity was inconclusive.

**CRD commentary**

The review question was clear in terms of the intervention, participants, study design and outcomes. Several relevant databases were searched, but it was not stated whether any language restrictions were applied and the methods used to select the studies were not explicitly described. Some studies may have been missed since the searches only went back to 1994 (the date of earlier overview), and the earlier overview itself may have missed some studies since it was not a systematic review. Validity was formally assessed using defined criteria and only those studies meeting the minimal quality criteria were included in the review. The methods used to assess validity were described. Relevant data were extracted and tabulated, but since only one reviewer extracted the data there is the potential for errors. The results were appropriately grouped by control intervention type and combined in a narrative synthesis in which attention was drawn to evidence from better quality studies. The evidence presented supports the authors' conclusion.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated that large prospective studies that report the type of intervention, including the recommended intensity of physical activity, and long-term (greater than 2 years) injuries are required. They recommended that such studies should document the reasons for patients dropping out.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.